

OFFICIAL

(Practitioner's Docket No. IN- 5350)

## PATENT

## IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of

Timothy S. DECEMBER

US Serial No. : 10/038,484

Filed: October 26, 2001

Group Art Unit: 1712

Examiner: Lovering, Richard D.

For: ELECTROCOAT RESIN COMPOSITIONS CONTAINING CARBAMATE FUNCTIONAL  
RESINS HAVING ONE OR MORE QUATERNARY AMMONIUM GROUPS AND AT LEAST ONE  
CARBAMATE FUNCTIONAL REACTIVE ADDITIVE

Commissioner of Patents  
P.O. Box 1450  
Alexandria, Virginia 22313-1450

CERTIFICATE OF FACSIMILE TRANSMISSION

I hereby certify that the following papers are being facsimile transmitted to the Patent and  
Trademark Office (fax No.: (703) 872-9310 on the date shown below:

☒ Response/Amendment, 10 pages

Total pages 10.

CONDITIONAL PETITION FOR EXTENSION OF TIME

Applicants believe that no extension of time is required. However, this conditional petition is being made to provide for the possibility that applicants have inadvertently overlooked the need for a petition for extension of time. In this event, please charge Deposit Account 23-3425 the necessary extension of time fees. This document is submitted in duplicate.

Monday, April 14, 2003

Date

Marjorie Ellis

(Typed or printed name of person mailing paper or fee)

Signature of person mailing paper or fee)

FAX RECEIVED  
APR 14 2003  
GROUP 1700

A/#4  
10/14/03  
PS

PATENT

(Practitioner's Docket No. IN-5350)

## IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of

DECEMBER, Timothy S.

Serial No.: 10/038,484

Filed: October 26, 2001

For: ELECTROCOAT RESIN  
COMPOSITIONS CONTAINING  
CARBAMATE FUNCTIONAL RESINS  
HAVING AT LEAST ONE OR MORE  
QUATERNARY AMMONIUM GROUPS  
AND AT LEAST ONE CARBAMATE  
FUNCTIONAL REACTIVE ADDITIVE.

Group Art Unit: 1712

Examiner: LOVERING, Richard D.

I hereby certify that the attached correspondence is  
being transmitted by facsimile to the Commissioner for  
Patents, Alexandria, Virginia 22313-1450, on April 14,  
2003, via transmission to facsimile number (703)-872-  
9310.

*Marjorie Ellis*  
Marjorie Ellis

1001-1  
reg all

AMENDMENT UNDER 37. CFR § 1.111

Commissioner for Patents  
Alexandria, Virginia 22313-1450  
Dear Sir:

## INTRODUCTORY REMARKS

This is in response to the outstanding Office Action of February 4, 2003 wherein pending claims 1-5 were rejected. Reconsideration is respectfully requested in view of the following amendments and/or remarks.

No extension of time is believed to be necessary. However, the Commissioner is hereby authorized to charge to Deposit Account 23-3425 any fees necessary for entry of this amendment.

FAX RECEIVED  
APR 14 2003  
GROUP 1700

## AMENDMENTS TO THE SPECIFICATION

Please amend the paragraph beginning on line 8 of page 1 as follows:

AI  
--The present application is a divisional application of U.S. Serial No. 09/464,431, filed on December 15, 1999, now U.S. Patent No. 6,380,323, which is hereby incorporated by reference.--

Please amend the abstract as follows:

## --ABSTRACT

The invention provides a resin composition comprising (A) a polymer comprising at least one primary carbamate functional group and one or more quaternary ammonium groups, and (B) a carbamate functional reactive additive that is generated in situ during the production of polymer (A).

AA  
The invention provides a cationic electrodeposition method requiring the immersion of a conductive substrate in a coating composition, applying a voltage between an anode and the conductive substrate, and removing the substrate from the coating composition. The coating composition of the invention comprises, in an aqueous medium, an aqueous dispersion of a resin composition comprising: The invention also provides a method of making a electrocoat resin composition comprising (A) a polymer having at least one primary carbamate group and one or more quaternary ammonium groups, and (B) a carbamate functional reactive additive which is generated insitu during the production of polymer (A), and (C) a compound having a plurality of active methylol or methylalkoxy groups that are reactive with said carbamate groups, the method comprising reacting a monomeric polyisocyanate, and a compound comprising at least one group that is reactive with isocyanate and at least one carbamate group, so as to produce both (1) an intermediate product having at least one carbamate functional group and at least one isocyanate functional group, as well as (2) a carbamate functional reactive additive having no isocyanate functionality, reacting said intermediate product with a compound having at least one epoxy group and at least one isocyanate reactive group, said reaction occurring in the presence of the reactive additive so as to produce a carbamate functional resin having at least one

A2  
~~epoxy group, reacting said at least one epoxy group with a tertiary amino compound in the presence of an acid to provide a carbamate functional resin having one or more quaternary ammonium groups, said reaction occurring in the presence of the reactive additive to provide a resin composition comprising (A) a carbamate functional resin having one or more quaternary ammonium groups and (B) a carbamate functional reactive additive.~~

~~Finally, the invention provides electrocoat coating compositions comprising the resin composition of the invention and a method of using said electrocoat coating compositions.~~